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EXAMINER

MEINECKE DIAZ, SUSANNA M

ART UNIT

PAPER NUMBER

3623

DATE MAILED: 09/15/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application N .

09/819,827

Applicant(s)

KAKIHARA ET AL. *NF*

Examiner

Susanna M. Diaz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8,10-22 and 33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8,10-22 and 33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

1. This Non-Final Office action is responsive to Applicant's after-final amendment filed August 27, 2003, which has been entered. Applicant's arguments are deemed to be persuasive in light of the recent interview with Applicant's representative on August 14, 2003; therefore, finality has been withdrawn and a new art rejection is presented below.

Claims 1, 12, 14, 21, and 33 have been amended.

Claims 23-32 have been cancelled.

Claims 1-8, 10-22, and 33 are pending.

2. The previously pending objection to the specification is withdrawn in response to Applicant's submission of a substitute specification with the proper corrections.

The previously pending rejection under 35 U.S.C. § 112, 2nd paragraph is withdrawn in response to Applicant's claim amendment.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 14-20 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Based on Examiner's understanding of a buffer area, as defined by the specification, a buffer area is a predetermined area (established on a predetermined map) that separates a charge applicable area from a different charge applicable area or a non-charge applicable area. Therefore, it is unclear how the buffer area can be determined dynamically based on a vehicle's detected position and expected movement, as recited in claim 14. Similarly, it is not clear how the determination of a buffer area can dynamically be set based on a detection error by the detecting means (as per claim 17) or based on at least one of a direction in which the moving body is traveling and a distance traveled by the moving body used in the estimating means (as per claims 19 and 22). The treatment of claims 14, 17, 19, and 22 in the art rejection below reflects Examiner's best understanding of the claimed "buffer area."

Claims 15, 16, 18, and 20 are dependent from claim 14 and therefore inherit the same rejection under 35 U.S.C. § 112, 2nd paragraph.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-8, 10-22, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Widl (U.S. Patent No. 5,721,678) in view of Sakurai et al. (U.S. Patent No. 5,675,494).

Widl discloses a charging device comprising:

[Claim 1] detecting means for detecting position information specifying the position of a moving body (col. 3, lines 14-65);

deciding means for determining a charge applicable area in predetermined map information and matching the map information with the position information, and deciding an entry state indicating whether or not the moving body has entered into the charge applicable area (col. 2, lines 31-63; col. 4, lines 21-28 – The fact that the vehicle's position is compared to geographical information in a database to determine whether or not the vehicle's location corresponds to a toll zone, i.e., a charge applicable area, signifies that the stored geographical information is equivalent to the claimed predetermined map information); and

generating means for generating charging information for the moving body based on a result of a decision by the deciding means (col. 2, lines 59-63; col. 4, lines 18-67; col. 5, lines 25-34);

[Claim 2] wherein the generating means is provided with storage means in which toll data that is determined in advance and corresponds to the entry state is stored in advance, and the charge information is generated using toll data of the storage means (col. 4, line 57 through col. 5, line 24);

[Claim 10] wherein the generating means generates charge information relating to tolls determined based on a distance traveled in the charge applicable area (col. 5, lines 25-28).

As per claims 1 and 3, Widl does not expressly teach the determination of a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means. However, Sakurai discloses a toll system that prevents double toll charging when a vehicle exits and subsequently reenters a toll area for a certain reason. More specifically, Sakurai states:

...by prohibiting the acceptance of the toll charge command for the vehicle for a predetermined period of time after the vehicle leaves the toll chargeable area, double toll charging is prevented in case the vehicle returns to the toll chargeable area for a certain reason (e.g., an accident, obstacles or the like) after leaving it. (Col. 8, lines 8-13)

In Sakurai's invention, the area adjacent to the toll chargeable area exemplifies "a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area." Sakurai's invention enhances the capabilities of well-known toll systems to prevent double billing for a brief deviation off of a toll road;

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therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to implement Sakurai's double billing prevention system with Widl's toll billing system in order to yield the claimed determination of a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means in order to prevent double billing for toll users who are forced to deviate off of a toll road for reasons outside of their control (e.g., an accident, obstacles, or the like), as taught by Sakurai.

[Claims 4-8, 11] The Widl-Sakurai combination discloses the use of a buffer area to prevent the double billing of tolls (as discussed above). Widl also teaches that different billing conventions may be used to assess tolls. For example, tolls may be charged based on vehicle type, distance traveled in a toll zone or the time of day the vehicle is traveling through the toll zone (col. 4, lines 58-67; col. 5, lines 25-34). However, Widl does not expressly teach the setting of a buffer area between multiple toll areas. Official Notice is taken that it is old and well-known in the art of toll systems that the following toll scenarios exist: adjacent toll areas and a plurality of toll areas that have

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different toll systems. Since the Widl-Sakurai combination uses buffer areas to help prevent double toll billing, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to adapt Widl to assess charges among various adjacent toll areas with different toll systems, using a buffer area to separate each of the different toll areas (as per claims 4-6), in order to make Widl's invention more marketable by increasing its usage over a wider collection of toll areas while utilizing a buffer area to help accurately verify a vehicle's position, thereby ensuring accurate billing throughout the various toll areas.

Furthermore, as per claims 7 and 8, Widl discloses that when a vehicle has entered a new area, a decision must be made as to whether or not the vehicle is in a toll area. Once such a determination is made, a toll is then assessed if it has been decided that the vehicle is traveling along a toll road (col. 4, lines 18-46). In the modified version of Widl (i.e., where Widl handles multiple, adjacent toll areas), the toll for the buffer area would logically be set to the toll of the toll area in which the vehicle is determined to be traveling. In other words, based on the Widl-Sakurai combination's teachings of setting the toll of the buffer area to that of the adjacent toll area through which a vehicle is traveling, the modified Widl would similarly determine tolls such that a toll for the buffer area is set based on a toll of one of adjacent areas (as per claim 7) or a toll of an area selected from a plurality of areas surrounding the buffer area (as per claim 8).

As per claim 11, Widl teaches the ability to charge tolls based on the distance traveled through a toll zone (col. 5, lines 27-28), yet he does not expressly disclose the charging of a toll based on a distance traveled, wherein this distance bridges a

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boundary between adjacent areas. However, the modified Widl facilitates toll charges across various toll areas. Furthermore, in light of Widl's disclosure of charging tolls based on distance traveled through a toll zone, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to further modify Widl such that its generating means is provided with storage means for storing a distance traveled in the charge applicable area when the distance traveled bridges a boundary between adjacent areas, and charge information is generated based on the stored distance traveled in order to facilitate such a toll charging procedure (i.e., based on distance traveled) throughout multiple toll areas, thereby making Widl's invention more marketable by enabling his invention to address the varying needs of multiple toll systems throughout a larger region.

Widl discloses a charging device, comprising:

[Claim 12] host moving body position detecting means for detecting a position of a host moving body (col. 3, lines 14-65);

storage means for storing data useful for determining charges to be rendered including predetermined map information, charge applicable areas, and areas other than the charge applicable areas or between different charge applicable areas (col. 2, lines 31-63; col. 4, lines 18-46 – The fact that the vehicle's position is compared to geographical information in a database to determine whether or not the vehicle's location corresponds to a toll zone, i.e., a charge applicable area, signifies that the

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stored geographical information is equivalent to the claimed predetermined map information);

determining means for receiving position information and relating it to map information, and for determining whether or not the moving body has entered the charge applicable area (col. 2, lines 31-63; col. 4, lines 21-28 – The fact that the vehicle's position is compared to geographical information in a database to determine whether or not the vehicle's location corresponds to a toll zone, i.e., a charge applicable area, signifies that the stored geographical information is equivalent to the claimed predetermined map information); and

charge processing means for performing charge processing for a host moving body relating to the charge applicable area based on a result of a determination by the determining means (col. 2, lines 59-63; col. 4, lines 18-67; col. 5, lines 25-34).

As per claim 12, Widl does not expressly teach the determination of a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means. However, Sakurai discloses a toll

system that prevents double toll charging when a vehicle exits and subsequently reenters a toll area for a certain reason. More specifically, Sakurai states:

...by prohibiting the acceptance of the toll charge command for the vehicle for a predetermined period of time after the vehicle leaves the toll chargeable area, double toll charging is prevented in case the vehicle returns to the toll chargeable area for a certain reason (e.g., an accident, obstacles or the like) after leaving it. (Col. 8, lines 8-13)

In Sakurai's invention, the area adjacent to the toll chargeable area exemplifies "a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area." Sakurai's invention enhances the capabilities of well-known toll systems to prevent double billing for a brief deviation off of a toll road; therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to implement Sakurai's double billing prevention system with Widl's toll billing system in order to yield the claimed determination of a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means in order to prevent double billing for toll users who are forced to deviate off of a toll road for

reasons outside of their control (e.g., an accident, obstacles, or the like), as taught by Sakurai.

[Claim 13] Widl discloses the use of a rechargeable "highway toll card" for making toll payments (col. 4, line 47 through col. 5, line 24), yet Widl fails to explicitly teach the use of an IC card for making toll payments. However, Official Notice is taken that the use of IC cards to make toll payments is old and well-known in the art of toll processing. IC cards provide for a convenient and secure way of transferring funds, especially in a wireless payment system. Further, IC cards are not as susceptible to damage or fraud as their predecessors, such as magnetic payment cards. Therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to utilize an IC card as Widl's "highway toll card" to store a user's balance information in order to provide for a convenient and secure way of storing and transferring funds wirelessly while minimizing susceptibility to damage or fraudulent accounting activity.

Widl discloses a charging device, comprising:

[Claim 14] detecting means for detecting position information defining the position of a moving body (col. 3, lines 14-65);

adding means for defining an area in which a moving body may be expected to move to from a detected position based on position information concerning the detected moving body, and adding a predetermined area to the position information (col. 3, lines

45-50 – Dead reckoning is a technique for estimating the expected position of a moving body based on a last known position and details of direction and velocity of travel at that last known position);

deciding means for identifying charge applicable areas based on predetermined map information, for matching the position information to the map information, and for deciding an entry state indicating whether or not the moving body has entered a charge applicable area based on the charge applicable areas (col. 2, lines 31-63; col. 4, lines 18-46 – The fact that the vehicle's position is compared to geographical information in a database to determine whether or not the vehicle's location corresponds to a toll zone, i.e., a charge applicable area, signifies that the stored geographical information is equivalent to the claimed predetermined map information); and

generating means for generating charge information based on a result of a decision by the deciding means (col. 2, lines 59-63; col. 4, lines 18-67; col. 5, lines 25-34);

[Claim 15] wherein the generating means is provided with storage means in which toll data that is determined in advance and corresponds to the entry state is stored in advance, and the charge information is generated using toll data of the storage means (col. 4, line 57 through col. 5, line 24);

[Claim 16] wherein the detecting means detects position information concerning a moving body based on satellite data from a position finding satellite (col. 3, lines 14-31);

[Claim 17] wherein the adding means sets the size of the expected area of movement based on a detection error by the detecting means (col. 3, lines 45-50 –

Dead reckoning is a technique for estimating the expected position of a moving body based on a last known position and details of direction and velocity of travel at that last known position. Taking into account Widl's invention as a whole, a toll charge is only applied when it is certain that a vehicle is located in a toll area. Further, dead reckoning is used to estimate the position of a vehicle while the position detection system is temporarily malfunctioning "due to shielding effects or unfavorable satellite position; therefore, Widl's invention teaches the setting of the size of an expected area of movement based on a detection error by the detecting means since it refrains from charging a toll until the detection error is deemed to be overcome, i.e., "if the agreement between the position data is sufficiently exact" (col. 3, lines 60-61));

[Claim 18] wherein the detecting means includes estimating means for estimated position information concerning a moving body based on at least one of a direction in which the moving body is traveling and a distance traveled by the moving body information (col. 3, lines 45-50 – Dead reckoning is a technique for estimating the expected position of a moving body based on a last known position and details of direction and velocity of travel at that last known position);

[Claim 19] wherein the adding means sets the size of the expected area of movement based on at least one of a direction in which the moving body is traveling and a distance traveled by the moving body used in the estimating means (col. 3, lines 45-50 – Dead reckoning is a technique for estimating the expected position of a moving body based on a last known position and details of direction and velocity of travel at that last known position. The area of expected movement can be interpreted as a buffer

area; col. 4, lines 18-46 – Taking into account Widl's invention as a whole, a toll charge is only applied when it is certain that a vehicle is located in a toll area. Further, dead reckoning is used to estimate the position of a vehicle while the position detection system is temporarily malfunctioning "due to shielding effects or unfavorable satellite position; therefore, Widl's invention teaches the setting of the size of a buffer area based on at least one of a direction in which the moving body is traveling and a distance traveled by the moving body used in the estimated means, i.e., "if the agreement between the position data is sufficiently exact" (col. 3, lines 60-61));

[Claim 20] wherein the generating means generates charge information relating to tolls determined based on a distance traveled in the charge applicable area (col. 5, lines 25-28).

As per claims 1, 17, and 19, Widl does not expressly teach the determination of a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means. However, Sakurai discloses a toll system that prevents double toll charging when a vehicle exits and subsequently reenters a toll area for a certain reason. More specifically, Sakurai states:

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...by prohibiting the acceptance of the toll charge command for the vehicle for a predetermined period of time after the vehicle leaves the toll chargeable area, double toll charging is prevented in case the vehicle returns to the toll chargeable area for a certain reason (e.g., an accident, obstacles or the like) after leaving it. (Col. 8, lines 8-13)

In Sakurai's invention, the area adjacent to the toll chargeable area exemplifies "a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area." Sakurai's invention enhances the capabilities of well-known toll systems to prevent double billing for a brief deviation off of a toll road; therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to implement Sakurai's double billing prevention system with Widl's toll billing system in order to yield the claimed determination of a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means in order to prevent double billing for toll users who are forced to deviate off of a toll road for reasons outside of their control (e.g., an accident, obstacles, or the like), as taught by Sakurai.

Widl discloses a charging device, comprising:

[Claim 21] detecting means for detecting position information concerning the moving body (col. 3, lines 14-65);

deciding means for determining a charge applicable area in predetermined map information and matching the map information with the position information, and deciding an entry state indicating whether or not the moving body has entered the charge applicable area (col. 2, lines 31-63; col. 4, lines 21-28 – The fact that the vehicle's position is compared to geographical information in a database to determine whether or not the vehicle's location corresponds to a toll zone, i.e., a charge applicable area, signifies that the stored geographical information is equivalent to the claimed predetermined map information); and

generating means for generating charge information for the moving body based on a result of a decision by the deciding means (col. 2, lines 59-63; col. 4, lines 18-67; col. 5, lines 25-34);

[Claim 22] adding means for determining an expected area of movement in which a moving body may be expected to move to from position information indicating position of the detected moving body, by adding a predetermined area to the position information, and wherein the deciding means uses the expected area of movement determined by the adding means when the deciding means is deciding the state of entry (col. 3, lines 45-50 – Dead reckoning is a technique for estimating the expected position of a moving body based on a last known position and details of direction and velocity of travel at that last known position).

As per claims 21 and 22, Widl does not expressly teach the determination of a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means. However, Sakurai discloses a toll system that prevents double toll charging when a vehicle exits and subsequently reenters a toll area for a certain reason. More specifically, Sakurai states:

...by prohibiting the acceptance of the toll charge command for the vehicle for a predetermined period of time after the vehicle leaves the toll chargeable area, double toll charging is prevented in case the vehicle returns to the toll chargeable area for a certain reason (e.g., an accident, obstacles or the like) after leaving it. (Col. 8, lines 8-13)

In Sakurai's invention, the area adjacent to the toll chargeable area exemplifies "a buffer area at a boundary between the charge applicable area and an area other than the charge applicable area." Sakurai's invention enhances the capabilities of well-known toll systems to prevent double billing for a brief deviation off of a toll road; therefore, the Examiner asserts that it would have been obvious to one of ordinary skill in the art at the time of Applicant's invention to implement Sakurai's double billing prevention system with Widl's toll billing system in order to yield the claimed determination of a buffer area at a boundary between the charge applicable area and an

area other than the charge applicable area and deciding an entry state indicating whether or not the moving body has at least entered into one of the charge applicable area or the buffer area, wherein, when a history of the entry state is one in which the moving body moves from the charge applicable area to the buffer area and then back to the same charge applicable area again, generating of charge information relating to an entry into the charge applicable area is prohibited in the generating means in order to prevent double billing for toll users who are forced to deviate off of a toll road for reasons outside of their control (e.g., an accident, obstacles, or the like), as taught by Sakurai.

[Claim 33] Claim 33 recites limitations already addressed by the rejection of claim 1 above; therefore, the same rejection applies.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to Applicant's disclosure.

Moström (U.S. Patent No. 6,252,523 B1) -- Discloses a system for charging different toll fees as a vehicle passes through different toll areas.

Dwyer et al. (U.S. Patent No. 5,864,306) -- Utilizes "in" and "out" regions to track a moving vehicle with a transponder.

Mertens et al. (U.S. Patent No. 5,717,389) -- Utilizes an umbrella zone to assist in verifying a vehicle's location.

Yoshida (U.S. Patent No. 5,581,249) -- Prevents double charging when a vehicle passes through the same toll area twice within a fixed amount of time.

Sato et al. (U.S. Patent No. 6,437,706 B2) -- Prevents double billing based on communication errors.

Ando et al. (U.S. Patent No. 6,081,718) -- Prevents double billing based on communication errors.

Matsumoto (U.S. Patent No. 5,708,972) -- Prevents double billing based on communication errors.

Von Tomkewitsch et al. (WO 94/27256 A1) -- Charges tolls by transmitting the proper toll schedule to a vehicle upon entry into a toll area.

Fujita (JP 11-185073 A) -- Prevents double billing based on communication errors.

Nishikigi et al. (JP 2000-293722 A) -- Prevents double charging when a vehicle moves to and from parts of the same toll area twice within a fixed amount of time.

Josifovska ("Pay As You Drive") -- Discloses electronic motorway tolling with use of an In-Vehicle Unit that includes a map display.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susanna M. Diaz whose telephone number is (703) 305-1337. The examiner can normally be reached on Monday-Friday, 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on (703) 305-9643.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Receptionist whose telephone number is (703)308-1113.

Any response to this action should be mailed to:

**Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450**

or faxed to:

(703)305-7687 [Official communications; including
After Final communications labeled
"Box AF"]

(703)746-7048 [Informal/Draft communications, labeled
"PROPOSED" or "DRAFT"]

Hand delivered responses should be brought to Crystal Park 5, 2451 Crystal Drive, Arlington, VA, 22202, 7th floor receptionist.

Susanna Diaz
Susanna M. Diaz
Primary Examiner
Art Unit 3623
September 8, 2003